Complete Summary

GUIDELINE TITLE

Diagnostic imaging in lymphoma.

BIBLIOGRAPHIC SOURCE(S)

Cancer Care Ontario (CCO). Diagnostic imaging in lymphoma. Toronto (ON): Cancer Care Ontario (CCO); 2006 Mar 8. 17 p. [18 references]

GUIDELINE STATUS

This is the current release of the guideline.

Please visit the Cancer Care Ontario Web site for details on any new evidence that has emerged and implications to the guidelines.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Lymphoma

GUIDELINE CATEGORY

Diagnosis
Evaluation

CLINICAL SPECIALTY

Oncology
Radiology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

- To provide some initial guidance to Ontario health care providers and planners on the use of cross-sectional diagnostic imaging technology for patients with lymphoma
- To promote evidence-based practice, provide guidance to clinicians about which imaging techniques are the most appropriate to use in the workup and management of their patients, provide information that is useful to those charged with planning for the number of imaging machines needed for patients with cancer in Ontario, and be used to monitor the use of imaging modalities in patients with cancer

TARGET POPULATION

Patients with lymphoma

INTERVENTIONS AND PRACTICES CONSIDERED

1. Computed tomography (CT)
2. Magnetic resonance imaging (MRI)
3. Ultrasound

MAJOR OUTCOMES CONSIDERED

- Disease recurrence
- Quality of life
- Survival
- Frequency of true- and false-positive tests
- Sensitivity and specificity of diagnostic tests
- Positive and negative predictive value

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Literature Search Strategy

English language evidence published between 1980 and 2004 was searched through MEDLINE, EMBASE, and the Cochrane Databases of Systematic Reviews and Abstracts of Reviews of Effects. Clinical practice guidelines, meta-analyses, systematic reviews, and trials reporting on sensitivity and specificity were also

sought. Search strategies were modified for each database and disease site (see Appendix A in the original guideline document).

Eligibility Criteria

Inclusion

Studies were included if they satisfied all of the following criteria:

1. Included patients with confirmed lymphoma
2. Evaluated computed tomography (CT), magnetic resonance imaging (MRI), or ultrasonography
3. Described an objective diagnostic standard
4. Reported data for disease recurrence, quality of life, survival, frequency of true- and false-positive tests for extent of disease, or sensitivity, specificity, positive predictive value, or negative predictive value to detect distant metastases
5. Were randomized trials, comparative cohort studies, case series (prospective or retrospective) with more than 12 *consecutive* patients, meta-analyses (published in English after 1998) of data from randomized trials, comparative cohort studies or case series, or evidence-based clinical practice guidelines

Exclusion

Letters, editorials, and meeting abstracts were not included.

NUMBER OF SOURCE DOCUMENTS

One comparative study, nine consecutive case series, and two retrospective studies were found.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

In 2003, Cancer Care Ontario (CCO) established a small working panel, the Diagnostic Imaging Panel, consisting of medical, radiation and surgical oncologists, diagnostic radiologists, and methodologists, to review guidelines published during the last five years on the use of cross-sectional imaging in oncology. After examining documents from nineteen guideline developers, the Panel concluded that the available guidelines did not meet the inclusion criteria or did not focus on the particular issues of interest to be endorsed. Therefore, the Panel decided to review the primary research and develop recommendations for Ontario on the use of computed tomography (CT), magnetic resonance imaging (MRI), and ultrasound (US) for the initial staging, assessment of tumour response during active treatment, and follow-up for patients with six types of cancer: lymphoma, breast cancer, colorectal cancer, prostate cancer, lung cancer, and ovarian cancer. Although regularly used in patients with lymphoma, gallium-67-citrate (Ga-67) scans and positron emission tomography (PET) scans are not reported on here because they were not a part of the original project scope. These modalities will be addressed in a separate document.

Because a systematic review of the literature identified few randomized studies to provide guidance on the use of cross-sectional imaging in the management of patients with cancer, cohort studies and case series reports were also included in the evidence review, and expert opinion was incorporated in the development of the recommendations. The initial selection and summary of relevant evidence was completed by methodologists at the Program in Evidence-Based Care (PEBC) in consultation with the clinical experts from the Diagnostic Imaging Panel.

The reviews served as the evidentiary foundation to inform the deliberation of clinical experts. Formal and informal consultations with radiologists was facilitated by Dr. Anne Keller, diagnostic imaging representative of the CCO Clinical Council, and undertaken with members who participated in the provincial MRI and CT Wait Times Strategy Expert Panel and the CCO Diagnostic Imaging Panel. In addition, consultations with oncologists were undertaken, mainly through the relevant disease site groups (DSGs) of CCO's Program in Evidence-Based Care. The recommendations that emerged through these consultations are presented in the format developed by the Canadian Association of Radiologists.

Input was sought from the CCO Hematology Disease Site Group (DSG) as well as clinical radiologists involved in the investigation of patients with lymphoma. The Panel reviewed the available evidence and determined that there was insufficient evidence to allow for definitive recommendations. Where data was not available, the Expert Panel considered published consensus guidelines and statements.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

External Review

The draft report, with recommendations developed by a small panel of experts in oncology and radiology, was distributed with a four-item survey in February and March 2006 for review, as part of an external evaluation process, to a broader group of Ontario radiologists and oncologists. The external review included 20 Ontario health care providers. All six respondents (30%) were medical oncologists and completed the survey, with three providing written comments. Five agreed and one neither agreed nor disagreed that the methods used in the report development were appropriate. Four agreed with the draft recommendations as stated, would follow the recommendations of the report, and agreed that the recommendations should be approved as guidelines for practice. However, one respondent neither agreed nor disagreed with those statements, and one respondent disagreed with them.

The major points of the comments included a remark by one respondent for the need for gallium scanning and positron emission tomography (PET) scans in the guideline. The Panel recognizes that mounting evidence exists addressing the role of these two modalities in lymphoma but notes that this lies outside the scope of this document. Another major item was concern about the paucity of evidence on which the recommendations were based. However, it was acknowledged that the evidentiary qualities of the data were poor, and so it was decided to look to well-established existing recommendations and guidelines. Computed tomography (CT) was chosen as the primary mode because of these existing practice guidelines. One respondent commented that, at best, magnetic resonance imaging (MRI) might be more accurate than CT and allow differentiation between residual scar tissue and tumour and, at the very worst, it is as good as CT, yet felt that the risk of radiation exposure in a young population by repeated CT scans over many years could be very real and that under the circumstances, more attention should have been given to magnetic resonance imaging as the preferred diagnostic test. The Expert Panel considered the data on the use magnetic resonance imaging in staging to be promising but noted that the data are very early and are based on the study of a small number of patients. Given the primacy of CT in the published guidelines and response criteria, the Panel considers this to be the modality of choice in staging and assessment of response. The Panel acknowledges that a concern may exist over radiation exposure with the use of serial CT scanning in follow-up but considers this can best be addressed by limiting follow-up imaging studies, particularly in patients at low risk of relapse.

The Program in Evidence-based Care (PEBC) Report Approval Panel (RAP) review resulted in no major changes to the document. The RAP remarked, however, that, because standard practices are based on scant literature and the incorporation of

this literature does not provide meaningful contributions to practice recommendations, it is therefore necessary to develop guidelines using a process that is principally built on consensus rather than upon published literature.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

These recommendations were developed by radiology and oncology experts in Ontario and are informed by research evidence and clinical expertise.

Lymphoma			
Clinical/Diagnostic Problem	**Investigation**	**Recommendation**	**Comment**
Staging	Computed tomography (CT)	Indicated (primary)	• CT chest/abdomen/pelvic ± neck in all patients is generally accepted as the primary modality for suspected lymphoma. • Useful in selecting the site for surgical tissue diagnosis.
	Magnetic resonance imaging (MRI)	Specialized study	
	Ultrasound (US)	Specialized study	
Response Assessment	CT	Indicated (primary)	• CT of at least involved area partway through treatment where this information will alter the treatment plan. • CT of at least involved area upon completion of treatment where this information will alter the treatment plan.
	MRI	Specialized study	• In select cases where indicated clinically.
	US	Specialized study	• In select cases where indicated clinically.
Follow-up	CT	Indicated (primary)	• Routine radiologic follow-up may be appropriate in following selected cases: • High-risk at presentation.

Lymphoma			
Clinical/Diagnostic Problem	**Investigation**	**Recommendation**	**Comment**
			• Those in partial response (PR) or complete response (CR) (unconfirmed) after initial therapy if positron emission tomography (PET) not available. • Those felt to be at risk of recurrence in anatomically sensitive areas (where ever CT is felt to be most appropriate). • Patients with incurable lymphomas.
	MRI	Specialized study	• When CT is unclear, MRI may be useful in identifying solid organ involvement, but does not prevent the need for surgical staging. In some cases, may show extra-nodal disease, such as bone marrow involvement when bone scan is equivocal.
	US	Specialized study	• Useful in select cases for abdominal and pelvic nodes, solid organ, etc.
Investigation of suspected relapse	CT	Indicated (primary)	• Physician should have a low threshold for signs and symptoms suggesting relapse. • The selection of imaging modality depends on physician discretion and anatomical position.
	MRI	Specialized study	• In select cases where

Lymphoma			
Clinical/Diagnostic Problem	**Investigation**	**Recommendation**	**Comment**
			indicated clinically.
	US	Specialized study	• In select cases where indicated clinically.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are supported by one comparative study, consecutive case series, and retrospective studies.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate use of diagnostic imaging in lymphoma

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Care has been taken in the preparation of the information contained in this document. Nonetheless, any person seeking to apply or consult the recommendations in this report is expected to use independent medical judgment in the context of individual clinical circumstances or seek out the supervision of a qualified clinician. Cancer Care Ontario makes no representation or guarantees of any kind whatsoever regarding their content or use or application and disclaims any for their application or use in any way.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006 Mar 8

GUIDELINE DEVELOPER(S)

Program in Evidence-based Care - State/Local Government Agency [Non-U.S.]

GUIDELINE DEVELOPER COMMENT

The Program in Evidence-based Care (PEBC) is a Province of Ontario initiative sponsored by Cancer Care Ontario and the Ontario Ministry of Health and Long-Term Care.

SOURCE(S) OF FUNDING

Cancer Care Ontario
Ontario Ministry of Health and Long-Term Care

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

Please visit the Cancer Care Ontario Web site for details on any new evidence that has emerged and implications to the guidelines.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Cancer Care Ontario Web site.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Browman GP, Levine MN, Mohide EA, Hayward RSA, Pritchard KI, Gafni A, et al. The practice guidelines development cycle: a conceptual tool for practice guidelines development and implementation. J Clin Oncol 1995;13(2):502-12.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on October 29, 2006. The information was verified by the guideline developer on November 24, 2006.

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